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Analysis of the 2006 National Immunization Survey (NIS) Data

By Jack C. Sims, Manager, Immunization Branch

According to the 2006 NIS, Texas coverage levels declined from 76.8 percent in 2005 to 74.7 percent in 2006, a difference of 2.1 percentage points, which falls within the statistical margin of error.

The Healthy People 2010 goal for individual vaccines is 90 percent. Texas has met this for five out of six vaccines measured:

- 4 doses of DTaP (81.4 percent)
- 3 doses of polio (91.7 percent)
- 1 dose of measles (92.0 percent)
- 3 doses of hepatitis B (91.5 percent)
- 3 doses of *Haemophilus influenzae* type b (92.7 percent)
- 1 dose of varicella (90.8 percent)

Since the 2002 NIS, Texas vaccine coverage levels have steadily increased:

- 2002 — 65.0 percent
- 2003 — 69.8 percent
- 2004 — 69.3 percent
- 2005 — 76.8 percent
- 2006 — 74.7 percent



Although Texas' ranking dropped from 24th to 34th, it is important to note the statistical error associated with the estimate of 74.7 percent is an interval of 3.7 percent. This means our state's vaccine coverage level could vary from 71.0 percent to 78.4 percent. There are 22 other states whose vaccine coverage levels fall within this range. Statistically speaking, Texas' coverage levels are similar to 22 other states whose rankings range from 19th to 41st.

Current estimates of vaccine coverage levels from the NIS are reflective of activities that were in place three years ago. Estimates will not reflect DSHS' in-

2006 NIS Data *continued from previous page*

tense efforts until two or three years from now. The biggest challenge continues to be the coverage for the fourth DTaP, which is at 81.4 percent. DSHS' efforts to address this problem have been as follows:

In July 2003, DSHS implemented a requirement for the fourth dose of DTaP for children attending child-care facilities by 19 months of age.

In February 2005, DSHS began sending immunization reminders to parents of children who turn 15 months of age and are missing the fourth DTaP (identified through ImmTrac, the statewide registry).

In 2006 and 2007, DSHS conducted media campaigns on pertussis disease, the importance of age-appropriate vaccinations, and completing the fourth DTaP.

In 2006, during National Infant Immunization Week, regional and local health departments sent reminders/recalls to all parents of children in the statewide immunization registry who were missing the fourth DTaP.

In 2007, during National Infant Immunization Week, over 1,400 child care facilities par-

ticipated in an exercise to check immunization records to determine if children were missing the fourth DTaP.

Activities planned for the next six months include:

Surveying children in



ImmTrac who do not have the fourth DTaP to learn reasons why this group is not receiving this dose.

Assessing data in ImmTrac to ensure that the first three doses of DTaP are being timely administered. Late vaccinations for the first three doses could account for delayed completion of the fourth dose.

Continuing parent education through media campaigns and incorporating messages about the importance of the fourth DTaP.

Educating providers not enrolled in the Texas Vaccines for Children Program (TVFC), educating providers enrolled in the TVFC during quality assurance visits, and working with the Texas Pediatric Society and Texas Medical Association to promote physician awareness on the importance

of the fourth DTaP.

Surveying other states or best practices related to the fourth DTaP. DSHS will implement effective initiatives identified through the survey.

Continuing to work with stakeholders in the statewide immunization system.

Regional and local health departments will be asked to participate in activities

throughout 2008 to target the fourth DTaP. The Immunization Branch will also be partnering with the Texas Medical Association and the Texas Pediatric Society to promote a provider education campaign. The Texas Immunization Stakeholder Working Group will also play a major role in getting the word out about the fourth DTaP.

Congratulations to the statewide immunization system for the hard work in getting other vaccines up to the Health People 2010 goals. But the job is not done; we have one more vaccine to go and only two years to get there, and we have to sustain each of the other vaccines as well.



Texas Immunization Stakeholder Working Group Celebrates Year Three

The Texas Immunization Stakeholder Working Group (TISWG) reached another milestone in August 2007. The working group began August 2004 with a mandate to create partnerships with public and private health, service, and education organizations to increase awareness and participation in the state's early childhood vaccination program. The working group is a hands-on interactive group that has diligently and consistently tackled issues of childhood vaccination and made considerable contribution to the business practices used by the department today.

by Vivan Harris, Services and Data Coordination Group

This year TISWG has expanded its focus to address the vaccination of adolescents. TISWG has been instrumental in providing guidance, support, and recommendations for the new Adult and Adolescent Vaccination Program. Members pictured represent several medical associations, state agency programs that serve children and families, community advocates, pharmaceutical partners, and parents. At the August meeting, a brief period was set aside to recognize the members for their contributions made over the past three years. Jack Sims, Im-

munization Branch Manager, presented each member with a certificate of appreciation and acknowledged the many contributions the working group has provided to the department.



For more information, visit us on-line at <https://www.dshs.state.tx.us/immunize/partners/tiswg.shtm>.

The working group is a hands-on interactive group that has diligently and consistently tackled issues of childhood vaccination



Photo by Charles Yowell, Texas Department State Health Services

TISWG members pictured:

Seated: Crystal Zamarron, Carrie Kroll, Velma Gonzales, Angela Craig, Dr. Camille Pridgen, Christine Contreras

Middle Row: Dan Walters, Carol Harvey, Anita Freeman, Laura Lerma, Fran Kirkley, Tim Hawkins, David Barker, Kathy Dreyer, Louise Reiszner, Karen Hess, Vivian Harris, David Scott

Back Row: Dr. Angela Lopez-Hobbs, Dr. Tamra Deuser, Clifford Pumphrey, Julia Moreno, Dr. Jason V. Terk, Frankie Milley, Dr. Barry Lachman, Dr. Neil S. Levy, Terrence Campbell, Kathy Moore, Jack Sims, Reece Patterson, Claude Longoria.

Immunization Branch News Briefs

Vaccine Advisory

The Immunization Branch *Vaccine Advisory No. 6, The 2007-2008 Influenza Season* is now online. The advisory contains a summary of the recommendations by the Advisory Committee on Immunization Practices (ACIP) for the flu season. Internet users may also download a version of the advisory in portable document format (pdf). Recommendations and information are also provided on the use of the nasal spray flu vaccine, the Texas Vaccines for Children (TVFC) *Influenza Order Form*, Texas schools and child-care facilities, and ImmTrac (Texas Immunization Registry) as well as several other topics related to In-

fluenza. Please visit the *Vaccine Advisory* main web page at, <http://www.dshs.state.tx.us/immunize/vacadvise/default.shtm> for more information.



HPV Workgroup

The Texas Department of State Health Services (DSHS) Immunization Branch formed a workgroup to address policy implemented during the 80th Legislative Session regarding the human papillomavirus (HPV) and the HPV vaccine. In addition to the Immunization Branch, the group consists of members from the Cervical Cancer Control Program, the HIV/STD Program, the School Health Program,

and the Texas Cancer Council. The group is using the Web to create and distribute information on HPV. Information will be developed about HPV, including, how it is contracted, and how it can be prevented. At this time there is one vaccine that prevents four types of HPV. Prevention is a focus of the group, as HPV is the leading cause of cervical cancer. Statistics reveal that 95-99% of cervical cancer cases exhibit onset of HPV. The education effort produced by the group will be fully launched by December to coordinate with Cervical Cancer Prevention Month in January.



Texas Vaccine Education Online

By Anita Freeman

The DSHS Immunization Branch has contracted with MicroAssist, Inc. to develop a series of web-based learning modules. Phase I of the project will be launched in early fall 2007 and modules will cover:

- ◆ The Texas Vaccines for Children Program (several modules on enrollment, vaccine account, TVFC eligibility, and program management),
- ◆ ImmTrac (two modules including an Overview and Basic),
- ◆ Working with the media,
- ◆ Vaccine preventable diseases,
- ◆ Perinatal hepatitis B prevention,
- ◆ Immunization standards including Adolescent and Adult vaccines and standards,
- ◆ Vaccine administration techniques,
- ◆ School and child care immunization requirements,
- ◆ Building and maintaining collaborations,
- ◆ Strategies to raise coverage levels,
- ◆ Contractor reporting.

Each module in Phase I will be 15-20 minutes. A notification will be placed on the Immunization website when the modules are operational. Phase II of the project is planned for 2008 for additional modules that will include continuing-education credits for physicians and nurses.

ACIP Recommendations for the 2007 - 2008 Influenza Season



(Note: Please refer to the "Influenza Resources" table, page 6, for links to documents referenced in this article.)

The Advisory Committee on Immunization Practices (ACIP) recommends annual influenza vaccination for groups at increased risk for severe complications from influenza, or for influenza-associated clinic, emergency department, or hospital visits.

ACIP emphasizes that immunization providers should offer influenza vaccine and schedule immunization clinics throughout the influenza season.

ACIP recommends annual influenza vaccination for:

People at high risk for complications from the flu, including:

- Children aged 6 months until their 5th birthday.
- Pregnant women.
- People 50 years of age and older.
- People of any age with certain chronic medical conditions.
- People who live in nursing homes and other long-term care facilities.

People who live with or care for those at high risk for complications from flu, including:

By Susan Belislie

- Household contacts of persons at high risk for complications from the flu (see above).
- Household contacts and out of home caregivers of children less than 6 months of age (these children are too young to be vaccinated).
- Health care workers.

Anyone who wants to decrease their risk of influenza.

Use of the Nasal Spray Flu Vaccine

Vaccination with the nasal-spray flu vaccine is an option for healthy persons aged 2-49 years who are not pregnant, or even healthy persons who live with or care for those in a high-risk group. The one exception is healthy persons who care for persons with severely weakened immune systems who require a protected environment; these healthy persons should get the inactivated vaccine.

Who Should Not Be Vaccinated

Some people should not be vaccinated without first consulting a physician. They include:

- People who have a severe allergy to chicken eggs.
- People who have had a severe reaction to an influenza vaccination in the past.
- People who developed Guillain-Barré syndrome (GBS) within 6 weeks of getting an influenza vaccine previously.

- Children less than 6 months of age (influenza vaccine is not approved for use in this age group).

People who have a moderate or severe illness with a fever should wait to get vaccinated until their symptoms lessen.

The ACIP lists primary changes and updates contained in the 2007 recommendations, which include:

- ACIP reemphasizes the importance of administering 2 doses of vaccine to all children aged 6 months–8 years if they have not been vaccinated previously at any time with either LAIV (live attenuated influenza vaccine) with doses separated by >6 weeks or TIV (inactivated vaccine) with doses separated by >4 weeks, on the basis of accumulating data indicating that 2 doses are required for protection in these children (see "Vaccine Efficacy, Effectiveness, and Safety" in the ACIP Recommendation on the 2007 Influenza Season listed under Influenza Resources, page 6).
- ACIP recommends that children aged 6 months–8 years who received only 1

ACIP emphasizes that immunization providers should offer influenza vaccine and schedule immunization clinics throughout the influenza season

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ACIP Recommendations *continued from previous page*

dose in their first year of vaccination receive 2 doses the following year.

- ACIP reiterates a previous recommendation that all persons, including school-aged children, who want to reduce the risk of becoming ill with influenza or of transmitting influenza to others should be vaccinated (see Box and Recommendations for Using TIV and LAIV During the 2007–08 Influenza Season).
- ACIP recommends that health-care administrators consider the level of vaccination coverage among health-care personnel (HCP) to be one measure of a patient

safety quality program and implement policies to encourage HCP vaccination (e.g., obtaining signed statements from HCP who decline influ-

enza vaccination) (see Additional Information Regarding Vaccination of Specific Populations).



Influenza (Flu) Resources

- ♦ Vaccine Advisory No. 6. The 2007-2008 Influenza Season
http://www.dshs.state.tx.us/immunize/vacadvise/AV_06.shtm
- ♦ ACIP Recommendation on the Influenza Season
<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5606a1.htm>
- ♦ IDCU Surveillance Reports for the 2007-2008 Season
<http://www.dshs.state.tx.us/idcu/disease/influenza/surveillance/2008/>
- ♦ CDC Influenza website
<http://www.cdc.gov/flu/>

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DSHS Encourages Annual Flu Shots

Texas Department of State Health Services (DSHS) officials are encouraging everyone 6 months and older to receive a flu shot as soon as the vaccine is available in their communities. A record 132 million doses of vaccine are expected to be available in the United States this flu season.

“Flu is more than just a bad cold that makes people feel uncomfortable,” said Dr. David Lakey, DSHS Commissioner. “This viral infection can lead to a serious, sometimes deadly illness. An annual flu shot is one of the best ways to protect people from flu and its complications and to reduce the spread of the virus.”

by DSHS Office of Communications

Flu season typically runs October through March, usually reaching its peak in Texas in January and February. People can get a flu shot anytime throughout the fall and winter. The shot takes about two weeks to become effective.

Flu symptoms include a sudden, often high fever; headache; extreme tiredness; dry cough; sore throat; runny or stuffy nose; and muscle aches. The illness is spread when an infected person coughs, sneezes or talks, releasing the contagious virus into the air. Complications of flu can include bacterial pneumonia, ear and sinus infections, dehydration and worsening of chronic conditions

such as congestive heart failure, asthma or diabetes.

Because flu viruses change, a new vaccine is produced each year. The viruses addressed by the 2007-2008 flu vaccine are: A/Solomon Islands (H1N1), A/Wisconsin (H3N2), B/Malaysia and similar strains. Flu shots do not contain live viruses and cannot cause the flu. A nasal-spray flu vaccine, which contains live, weakened flu viruses that do not cause the flu, is an option for healthy people ages 2 years to 49 years who are not pregnant. About 36,000 deaths are recorded in the United States each year from flu complications.



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Child-Care 100% Audit Campaign (HSR 4/5N)

Leaving no “Stepping Stone” unturned, Region 4/5 North partners recently completed their own self-imposed challenge to audit 100% of all child-care facilities within the 35 county Region.

Ron Harkins, Immunization Auditor led the project, and performed over 200 of the visits himself. Local health departments in Angelina, Bowie, Cherokee, Jasper, Newton, Lamar and Smith counties audited 100% of the day-care facilities in their own jurisdictions.

The project was conceived when it was noted that the same facilities were often repeated year after year on the list of facilities to be audited. Meanwhile, other large facilities would rarely or never make the list. Because the age group attending child care is always an important target group for immunizations, the logical solution was to audit every facility.

A complete list of every licensed child-care facility, including day cares, Head Starts, and registered homes, was downloaded from the Child Protective Services website. The website lists up-to-date and complete contact information, by county, for every facility registered or licensed with the state.

In addition to performing a

By Kevan Bauer, Community Outreach & Training HSR 4/5N

complete audit on every immunization record on file, Harkins also offered training to all day-care directors or office managers. The training included a thorough review of the “Immunization Requirements for Children and Students,” an explanation of the immunization schedule, and handouts on vaccine preventable diseases that directly affect child care facilities; such as pertussis and rotavirus. After noting any deficiencies and/or immunizations that would soon be due, facilities were re-contacted after 30 days to inquire about the status of the missing shots.

ImmTrac, the Texas Immunization Registry, was a hot topic at every audit. Ron surveyed every facility he visited about their familiarity with the registry. Some had already discovered the valuable tool, but to most facilities, it was a most welcome revelation. Facilities were given information on how to register to become ImmTrac users. Others went a step further and provided copies of all their children’s vaccine records to the DSHS Regional Office, where staff took the time to carefully input any missing histories. For any children who were missing from the database, Ron provided the facilities with a list of children not found and blank consents to see that the children had the opportunity to enroll.

“I visited several facilities that asked me when we had started doing audits like these. They were not aware that we audit immunization records, and had never been seen at all,” said Harkins.

Harkins averaged 4 to 6 facilities each day, depending on the size. He scheduled three or four days out of every week to visit child care facilities, working on one county at a time. Some counties required a month or more of work, while the more rural counties were completed within a day or two.

Some of the local health departments worked with their own county child care facilities to provide special immunization clinics to catch up the overdue children as a part of their processes.

A large number of children were brought up to date on their vaccines as a result of local health department staff and Ron Harkins’ diligence toward the project. Their collaboration also ensured day care directors and managers

The project was conceived when it was noted that the same facilities were often repeated year after year on the list of facilities to be audited.

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HSR 4/5N *continued from previous page*

were educated more thoroughly on the law, more ImmTrac users were signed up, and complete ImmTrac histories increased significantly. The Region 4/5 partners who worked on the 100% immunization audit project helped put the "care" in day care.

Coming up in 07-08? The 100% School Audit project!



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Tetanus Shots Provided for Flood Victims in Burnet County (HSR 7)

By Health Service Region 7 Staff

The Department of State Health Services (DSHS) Health Service Region (HSR) 7 staff collaborated with external partners in providing special Td/Tdap immunization clinics in the Burnet County area during the aftermath of the serious flooding due to the extreme summer rains.

HSR 7 staff partnered with Dr. Madrigal's staff, Seton Healthcare, Texas Nurses Association Ready Nurses, Marble Falls Area EMS, and the Texas Legislative Council. The collaboration resulted in seven special clinics conducted in Marble Falls, Granite Shoals, and Kingsland where over 1,300 immunizations were administered.



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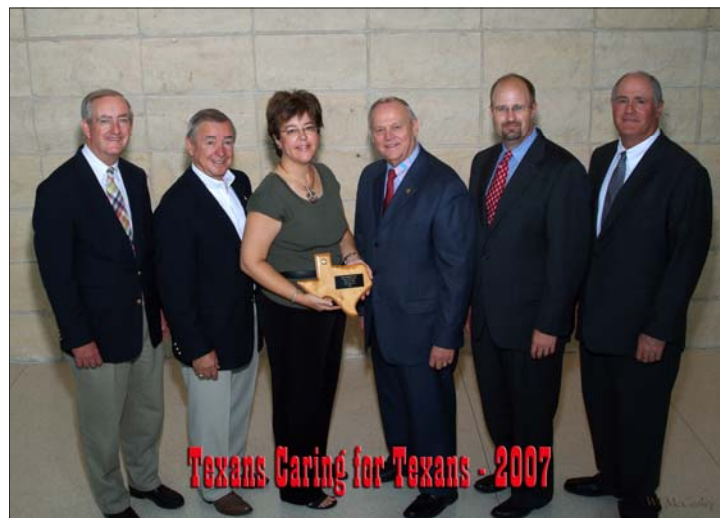
Texans Caring for Texans Award (HSR 1)

Keila Johnson, Immunization Program Manager – Health Service Region (HSR) 1, is this year's recipient of the 2007 Texans Caring for Texans Award. The award is indicative of Keila's dedication and commitment of service to the citizens of West Texas. Keila received her award from members of the Texas Legislature on Tuesday, August 14, 2007, at the West Texas A&M University Fine Arts Complex in Canyon, Texas.

has been consistent in new settings and trials. One logistical challenge required giving over 6000 injections in one setting. Keila's staff is confident in her management capability and reassured by her commitment and support. Please join us in congratulating Keila.



Keila has been innovative in streamlining operations for HSR 1. Her leadership ability



Keila Johnson with Texas State Representatives and Senator Phil Wilson, Secretary of State, spoke at the ceremony.

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New Media Techniques in El Paso (HSR 9/10)

by Charles Curtis Yowell, Information Specialist, Public Information, Education, and Training Group

The Department of State Health Services (DSHS) Immunization Branch is working with Health Service Region (HSR) 9/10, the City of El Paso, and the DSHS Services and Data Coordination Group in the distribution and evaluation of the auto shade pilot program.

The auto shade features the DSHS Immunization Branch blocks logo along with the slogan "Vaccines Build Your Child's Health." The auto shades serve as mini-billboards, featuring the Immunization Branch 800 number and web address.

Alma Thompson with the

PIET Group states, "We are using creative tactics and tools to reach our audience. The greater the variety of media that we put out in the public the more likely our audience will see it."

The partnership is working to accurately assess the effectiveness of the unique media strategy. El Paso will be primarily responsible for the distribution of the auto shades. The PIET Group and Services and Data Coordination Group will be in charge of data coding, collection and analysis. Distribution of the auto shades began in September and will continue throughout the fall. The survey to evalu-

ate the success of the auto shades will begin 90 days after complete distribution of the shades.

Results obtained from the data analysis will be used as a basis of whether or not to expand a similar method in other areas of Texas. El Paso expressed interest in the project, and was chosen based on population size.



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ImmTrac's *Request Client Add* Process Allows for Faster Processing of Consent Forms

By Laura LeBrun, ImmTrac Group

In January 2007, to help create new client records more efficiently, the ImmTrac Group implemented the new *Request Client Add* process that expedites the processing of consent forms for new clients. Using this new process to submit consent forms allows ImmTrac to expedite the process and create the new client record within three business days.

ImmTrac, the Texas Immunization Registry, on average, receives 875 to 1,400 client participation consent forms each day. Texas law requires written parental



consent for ImmTrac participation prior to inclusion of a child's record in ImmTrac. ImmTrac currently contains 62.4 million immunization records for almost 5.4 million Texas children. Although some submitted consent forms are for children already participating in the registry, the majority are for new clients whose records must be created. Under the old system when the ImmTrac Group received a signed, manually completed *Immunization Registry (ImmTrac) Consent Form (#C-7)*, it took as many as two to three months for the client's record to be created. This meant the healthcare providers had to wait several months before they could add a client's immunizations into the ImmTrac record as required by law.

The new process gives registry users two options for requesting the addition of a new client into ImmTrac. Before submitting a signed consent form, ImmTrac users should conduct a *Quick* or *Basic Search* to ensure the client is not already participating in ImmTrac. If these searches do not find the client's record in ImmTrac, a *Smart Search* should be conducted. The *Smart Search* allows the user to conduct a more advanced search by requiring the entry of additional client information. When a *Smart Search* has been performed and a matching client record is not found, the "Client List" screen will display a message that no clients matched the search criteria. The question on the page asks the user, "Do you have a signed ImmTrac consent form (C-7) for your client?" Users must respond to the question by selecting either "YES [Request Client Add]" or "NO [Request Consent Form]" in order to proceed. If the parent has already been offered and signed a blank *Immunization Registry (ImmTrac) Consent Form (#C-7)*, the user should select "YES [Request Client Add]" as the response. ImmTrac will then display a unique number, which the user should handwrite on the consent form in the box labeled "For Clinic/Office Use."

If an ImmTrac consent (#C-7) form has not been completed or signed by the

ImmTrac's Request Client Add

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parent, the user should select "NO [Request Consent Form]" to request a pre-filled, bar-coded *Immunization Registry (ImmTrac) Consent Form* (#IG-7). The form is pre-filled based on the search criteria entered into the *Smart Search* fields. Once printed, ImmTrac-generated, pre-filled consent form should be offered to the parent for signature.

"One of the greatest benefits of providers using the *IG-7* or handwritten unique code numbers over the *C-7* forms is a lower error rate when interpreting handwriting since the information is coming directly from the provider's *Smart Search*," said ImmTrac Program Specialist Christine Robinson.

In addition, the unique number and barcode contains the client's information, which allows ImmTrac to quickly create the client's record. ImmTrac staff expedites the process upon receipt of the signed consent form, with no need for additional data entry.

The *Request Client Add* process helps expedite the creation of a new client record when a consent form is submitted by a provider's office. Public providers who utilize the Texas Wide Integrated Client Encounter System (TWICES) print the *TWICES Immunization Consent Form* directly from the TWICES sys-

tem to obtain consent for ImmTrac participation. Although TWICES users should continue to offer parents the opportunity to grant consent for registry participation through the TWICES system, users should first check both the TWICES and ImmTrac systems to ensure the child is not already participating in ImmTrac.

"Instead of performing a *Smart Search* to get the unique number, the provider can print the TWICES *Immunization Consent Form* with the click of a button, then get a signature from the parent and fax the form to us," said ImmTrac Program Specialist Janie Delgado. "The time it takes to process the *IG-7* and the TWICES forms is the same – about three business days," added Ms. Delgado.

This expedited consent process has improved how quickly a client can be added to the registry, and is very useful during the summer months before school begins. Schools and child-care facilities are allowed access to ImmTrac to search for students' immunization records used during enrollment periods. If the *C-7* consent form is submitted when parents grant consent for their child to participate in ImmTrac, the school may not be able to find the client's record until 2-3 months after the beginning of the semester. Using the *IG-7* consent form instead means

the client will be added to the registry within three business days, making that record available to all users much sooner. Having the most accurate and up-to-date information in ImmTrac improves the registry's usefulness for all users across the state.



For additional information regarding ImmTrac, visit www.ImmTrac.com or call ImmTrac Customer Support at 1-800-348-9158.



2007 Pertussis Vaccine Awareness

By Markel Rojas and Alma Thompson, PiET Group

In this article we take a look at two recent activities by the Texas Department of State Health Service (DSHS) Immunization Branch, which sought to increase pertussis vaccination awareness in the state of Texas. In the first part we look at the implementation of pertussis educational materials in coordination with National Immunization Awareness Month (August). The second section gives a description of a media campaign that was implemented this fall.

2007 National Immunization Awareness Month (NIAM)

August, 2007

The goal of the 2007 NIAM was to increase awareness about immunizations throughout the life-time—from infants to the elderly. In observance of the 2007 NIAM, DSHS focused on pertussis, asking everyone to get vaccinated against the disease.



Pertussis continues to be a public health threat in Texas. Pertussis is commonly known as a child-

hood disease. In reality, it is a disease anyone can get. It usually runs in three-year cycles, with increasing incidence peaking in the third year. Pertussis is especially dangerous in infants, who frequently get pertussis from older children and adults. Most hospitalizations and deaths occur in infants under three months of age. It is important the public becomes aware and educated about this disease and takes preventive measures.

Highway and neighborhood billboards featured a message targeted toward mothers to vaccinate their entire families against pertussis.

Tdap, a vaccine against tetanus, diphtheria and pertussis, recently became available. Tdap is recommended for older children and adults. Your health care provider can provide additional information and administer the vaccine.

Texas 2007 NIAM Activities:

- Distributed information and materials about pertussis to all public and non-public schools. This distribution was made through electronic mail systems,

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Designing and Developing Curriculum: A Seven Step Process

By Kathryn Johnson, Manager, Training Coordinator

Designing and developing curriculum into a learning environment can be challenging. There are many people involved in designing and developing good curriculum; the subject-matter experts, customers and curriculum developers and other stakeholders. This article is the first in a series of designing curriculum.

This article discusses how curriculum design and development can be done effectively and efficiently through answering key questions and implementing plans. Designing curriculum has a seven-step process consisting of the following steps: conducting a needs assessment, determining curriculum goals, creating learning objectives, developing a storyboard, implementing the training, evaluating the curriculum and celebrating your successes.

Step 1: Conduct a Training Needs Assessment

A training needs assessment is the process of identifying the actual and the desired state of the organization, setting priorities and making decisions about organizational improvements, and allocation of resources. Consult with your target audience to determine both needs and resources. Determine who else is writing or has written curriculum you seek to write. Training needs assessments may:

- Generate ideas and document perceptions about various exploratory issues
- Provide opportunities to collect information to support likely alternatives along with decisions
- Enable you to inform and lead others to action that will improve service or product delivery
- Identify the target population that you serve and the nature of the service needs
- Enable you to justify program policy
- Provide a means to express needs and develop alternatives to address them
- Determine whether needs have been met

Questions to answer:

- Who are your customers?
- What is your service?
- What are your customer needs?
- What adjustments are needed to the service you provide to your customers?

Step 2: Determine Curriculum Goals

To begin curriculum development, you should determine how the subject-

Development continued from previous page

matter experts and the curriculum designer/developer(s) will work together for the best results. In developing measurement criteria, you should be realistic about the customers' needs and what you can deliver. It may not be realistic to address service outcomes initially.

Questions to answer

- What is the goal of the training?
- What are the roles and responsibilities of your internal and external customers?

Step 3: Create Learning Objectives

It is important to incorporate your service and learning objectives into the curriculum. The learning objectives should specify to what degree the newly learned skill should be performed. Determine what you want your class participants to learn. Development should involve measurement-criteria, and the determination of criteria for curriculum standards. The table below lists the components of developing learning objectives.

S pecific
M easurable
A ttainable
R ealistic
T ime framed

What are the:

- Learning objectives for the training?
- Long-range desired out-

The ABCDs of Learning Objectives:

Audience	Who is the audience? Who will perform the new or refreshed skill?
Behavior	What specific observable behavior will be demonstrated? What will the learner be able to do?
Condition	What are the conditions imposed when learners are demonstrating mastery of an objective? What will the learner be allowed to use? What won't the learner be allowed to use? Under what conditions must the learner master the skill?
Degree	To what degree will the performance be evaluated? Tell the learners how well the behavior must be performed. Focus: "Is it good enough"?

comes of the training?

- Class, group or individual class discussions and exercises per lesson?

Step 4: Develop a Storyboard

A storyboard is an outline, blueprint, or map for your training. A storyboard serves as a roadmap for developing the training material for the participants and trainers. What is the purpose of a storyboard? A storyboard allows you to:

- Organize and sequence training content
- Brainstorm ideas with the curriculum development team
- Estimate number of presentation screens and participant manual pages needed per lesson
- Design screen/page layout
- Propose audio-visual equipment needed per lesson

What are the tips for creating a storyboard?

- Research the content of the curriculum

- Discuss the content with stakeholders and identify the scope of the material

- Arrange the content into lessons or modules that follow a logical sequence based on the context of the material

- Estimate the time that it may take to convey each main idea

- Make sure the storyboard progresses logically from one idea to the next (include an introduction, body and conclusion for each lesson)

- Identify content that is lacking or requires enhancements

- Reduce and categorize the content to main ideas within each lesson

- Bring all of the information that you researched and organized into a visual representation of the training

Questions to answer:

- What are the titles of the training topics or lessons?
- What are the learning objec-

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tives for each lesson?

- How will the training progress from one lesson to another?
- What are the audio-visuals or multimedia assets that will be used?
- How many class discussion, quizzes, group or individual class exercises will be included with each lesson?
- What is the estimated time per presentation screen?
- What is the estimated time per participant manual page?

Step 5: Implement the Training

Once the curriculum has been developed, it's time to "put the plan into action." The delivery of the training must be continually improved, and the curriculum should be updated as needed. Extensive research shows that what you say accounts for less than 10% of the overall effect of your presentation. However, how you say what you say is responsible for almost 40% of the overall effect. The following are tips for effective implementation of the training:

- Keep your training focused on the learning objectives for each lesson
- Tailor your presentation to your audience
- Make sure everyone can hear and understand you
- Use a comfortable pace when speaking
- Control your tongue muscles

to enunciate with clarity

- Use language your audience understands
- Make eye contact with participants
- Make your gestures congruent with what you're saying
- Always face the audience, and stand in a place where you can be easily seen
- Set up and use your audio-visual equipment effectively and efficiently

Step 6: Evaluate the Curriculum

According to Jack Phillips PhD, Chairman of the ROI Institute™, the purpose of evaluation is to improve the human resources development process and to decide whether or not to continue this process. An evaluation of the curriculum is important in determining the impact of training on performance and return on investment. The evaluation will assess whether training should be repeated or whether modifications should be made for the next training.

Donald Kirkpatrick, PhD, created and developed the first training evaluation model, which has been used over 40 years. The training evaluation model is the most widely used model used to determine whether participants liked their instruction and learned something from it. The training evaluation is also used to determine the overall impact

for the organization.

Jack Phillips added another level, return on investment (ROI) to Kirkpatrick's four-level model making it a five-level training evaluation. ROI is a significant part of a training evaluation that has not received adequate attention in most organizations.

According to Phillips an evaluation should do the following:

- Determine whether the training accomplished the learning objectives
- Determine the cost/benefit ratio of the training
- Decide the type of participants who should participate in future trainings
- Identify which participants benefited most and least from the training
- Gather information to market future trainings
- Identify strengths and weaknesses in the training program

Questions to answer:

- What do the participants' written evaluations say about the training?
- What information does the evaluation assess?
- Do the evaluations provide enough information to make decisions about the training?
- What changes should be made to the curriculum, if any?

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- What aspects of the training worked well and can be improved?

Step 7: Celebrate your Successes

The last step involves recognizing participants for their successes. After curriculum is delivered successfully, you should recognize the people who helped to design and deliver it. Celebrating one's successes sets a positive tone for future curriculum ventures. Take the time to recognize individuals in the hallway at work, at conference events, during participation in national immunization programs, or in the next issue of the *UpShot Online*.

Designing and developing curriculum usually starts with identification of needs, ideas and brainstorming followed by research and experiments.

Another important part of curriculum development is the celebration phase. According to Bart Noordam and Patricia Gossling, authors of *Mastering Your PhD: Survival and Success in the Doctorial Years and Beyond*, there are three ways to celebrate:

- Acknowledge co-workers for their contributions to your success. This will improve the odds that they will want to help you toward your next milestone
- Reflect on "lessons learned," which is part of the process of celebrating successes. Analyzing reasons for your success might help you in the next curriculum development project
- Celebrate to heighten morale. When you celebrate regularly, you create a "winners atmosphere." You'll have inspiration to proceed

with the next curriculum project

Questions to answer:

- What incremental business gains were achieved as a result of the training?
- Who and how many achieved their goals?
- Did the training meet your expectations?
- If participation was voluntary, what do non-volunteers think about the training?

The seven-step process is an effective and efficient process to follow for design and development of curriculum. The process is extensive, but it can be extremely rewarding for both the developers and the staff who benefit from the curriculum.



LEVEL OF EVALUATION	QUESTIONS
Level 1: Reaction Satisfaction measurement	Were the participants pleased? What will participants do with their new knowledge and skills? How was the reaction measured? (for example post-training surveys and quizzes during training)
Level 2: Learning	How was learning measured? What skills, knowledge or attitudes have changed? To what level or degree have knowledge or attitudes changed?
Level 3: Behavior	How were behaviors measured? Did the participants change their behavior based on what they learned in the training?
Level 4: Results	How were the results measured? Did the behavior change have a positive impact on the organization?
Level 5: Return on Investment (ROI) <i>(Jack Phillips added the fifth level to Donald Kirkpatrick's training evaluation model)</i>	How was ROI measured? Was ROI calculated by converting productivity and quality improvements to monetary values?

ImmTrac Customer Service Improvements Through Stakeholder Involvement

By ImmTrac Staff

The ImmTrac (Texas Immunization Registry) Group launched several initiatives, including the establishment of a stakeholder working group to identify issues, concerns, and needs of healthcare providers. Working with the stakeholder group and other ImmTrac users provided valuable input. As a result, high-leverage actions to achieve ImmTrac goals were identified and prioritized. The effort started as a way to overcome resistance to change and to address user objections.

Texas healthcare providers are required by law (House Bill 1921, 78th Legislature) to report to ImmTrac any immunizations administered to a child younger than 18 years of age. However, many providers still do not effectively report or utilize the registry. ImmTrac staff continuously improves the registry to benefit all users by frequently implementing new initiatives to improve customer service and registry utility. Almost half the users of ImmTrac are private health care providers.

Formation of ImmTrac Provider Working Group (IPWG)

The Texas Department of State Health Services (DSHS), in partnership with the Texas Medical Association (TMA) and the Texas Pediatric Society (TPS), established the ImmTrac Provider Working Group (IPWG) in August 2005. IPWG was formed to obtain input from Texas physicians and other private healthcare providers on a collaborative education, marketing, and development plan to increase physician participation in ImmTrac. IPWG is comprised of invited physicians from across the state, representatives from medical practice managers' and nurses' organizations, plus ImmTrac, TMA, and TPS staff. All members have been nominated by the IPWG Coordinating Committee, comprised of TMA, TPS, and DSHS representatives.

IPWG's focus areas and objectives include: developing effective strategies for educating private providers about ImmTrac and reporting requirements; identifying provider target groups for educational and promotional activities; developing initiatives, activities, and tools for increasing awareness of ImmTrac and promoting benefits of participation; establishing partnerships and collaborative efforts to implement an education and marketing plan; and reviewing the ImmTrac system and offering input on a development plan for future enhancements and improvements.

IPWG Activities:

IPWG members determined a shared vision of ImmTrac and proceeded to identify and prioritize high-leverage actions to attain this vision. Top priorities

ImmTrac Customer Service *continued from previous page*

included: targeting and educating birth registrars to increase client participation, importing of clearinghouse and billing data into ImmTrac, enlisting physician champions to influence peers, increasing training for physicians' staff, increasing health plan reporting, educating physicians and other providers to encourage ownership and involvement, moving physicians from commitment to ownership, and encouraging school nurses to enter immunization data into ImmTrac.

ImmTrac Initiatives:

Birth Registrar Education Initiative

In March 2006, the ImmTrac Group launched its birth registrar education initiative, targeting birth registrars in hospitals showing low performance in implementing the ImmTrac newborn consent process. ImmTrac staff focused on major metropolitan areas such as San Antonio, Houston, Dallas, and parts of El Paso and Northeast Texas. ImmTrac staff also provided educational and technical assistance to birth registrars and hospital administrators.

Strategies included identifying and surveying hospitals with successful implementation of the ImmTrac newborn consent process, sharing "best practices" learned from high-performing hospitals, implementing a high performance recognition program and pres-

entation of the *ImmTrac Award for Excellence* at the Vital Statistics Unit's Annual Conference, production of articles and ads to recognize birth registrars' contribution to health of Texas children, and collaboration with the Texas



Hospital Association for dissemination of performance results. In 2006 more than 120 hospitals received the reward, compared to only 43 hospitals in 2005.

Collaboration with TAOG for Parent Education

The ImmTrac Group also collaborated with the Texas Association of Obstetricians and Gynecologists (TAOG), encouraging them to express the benefits of child participation in ImmTrac to expectant women and women planning a family. Strategies included coordinating with TAOG to

include in their 2006 annual newsletter an article discussing the benefits of ImmTrac participation for children and inviting OB/GYNs to partner with DSHS in this educational effort. When completed, ImmTrac staff will evaluate the effectiveness and impact of this collaborative effort.

Physician, Other Provider, and Payor Education

To increase and facilitate physician, payor, and other provider participation, the ImmTrac Group continued its educational efforts through participation in professional conferences and local workshops and in-services. Exhibits and/or presentations were offered at 10 conferences throughout the state in the first half of 2007 and will continue through the end of the year. A full color ad promoting the "effective use" of the ImmTrac application was produced and published in issues of *Texas Family Physician*, a publication of the Texas Academy of Family Physicians organization.

Registry Application Development Initiative

Various "ease of use" enhancements to the ImmTrac application have been implemented to facilitate reporting by providers and health plans and to improve the utility of

In 2006 more than 120 hospitals received the reward [ImmTrac Award for Excellence], compared to only 43 hospitals in 2005.

Continued on next page

ImmTrac Customer Service *continued from page 19*

registry data. These enhancements and improvements were based on stakeholder input. Technical enhancements included: implementation of the *Electronic Data Translation* capability to allow providers to submit immunization information electronically in virtually any format, improvements to the client search capability, security enhancements, implementation of bar code technology to streamline consent form processing, and enhancements to the formatting of the ImmTrac-generated immunization history report.

Conclusions

The ImmTrac Team applied technological innovation to address the needs and challenges identified by IPWG, including the implementation of ease-of-use improvements, operational improvements, enhancements to facilitate immunization reporting and data utilization, and strategies to enhance promotional activities. Implementation of the newborn consent process by previously low-performing hospitals has also shown significant improvement. Parental consent of newborn participation has also increased.

IPWG became involved as partners to resolve challenges, implement solutions, and encourage registry participation to their peers and colleagues. During this period of change, ImmTrac experienced significant growth in provider and health plan participation and improvement in registry data population and quality indicators.



DSHS *Bon Voyage*

Julie Townsend

Epidemiologist, Services and Data Coordination Group

Julie Townsend recently took a position with the Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia. Julie worked for TDH legacy and DSHS for approximately 5 years, beginning her DSHS career in the Surveillance and Epidemiology Program.

Julie's skills in data analysis and knowledge of immunization issues helped her make significant contributions to the Immunization Branch programs. Her ability to present data and give a thorough picture of an immunization issue was especially helpful during the legislative session. We miss Julie, but we are very

happy for her as she moves on to a new and exciting opportunity.



Kelly Klein**Program Specialist, ImmTrac**

Kelly Klein joined the ImmTrac team on August 20.

Kelly will provide technical support and assist with data imports from healthcare providers.

She earned her Bachelor's degree in Business Administration with a concentration

in Management Information Systems from Florida International University in 2000.

Before working for ImmTrac, Kelly worked as an auditor at the Office of Inspector General. Kelly recently moved to Texas from Miami, and she has two dogs and two cats.

**Nicolas Lopez****Public Health Technician (PHT) , Public Information/Education/Training Group (PiET)**

Nicolas Lopez has returned to the Immunization Branch as a public health technician in the PiET group. He has over 11 years of state service in health care, including: Immunization Branch, TX Medicaid/CHIP Vendor Drug, and University of Texas at Austin Health Services Pharmacy.

He is a proud graduate of the University of Texas at Austin, where he earned his bache-

lor's degree in microbiology.

He states, "As a PHT, I will provide technical information regarding immunization, Texas vaccine requirements, the recommended immunization schedule, and Immunization Branch activities to health care professionals and the general public. One thing I really like about my po-

sition is that I keep abreast of infectious/vaccine-preventable diseases and vaccines through continuous training and education. I am so happy to be back and continue my state service at the Immunization Branch!"

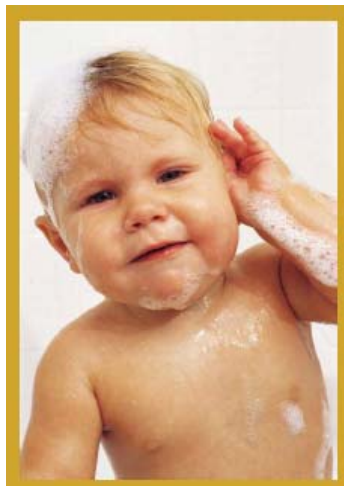
**Santiago Espinosa****Program Specialist, ImmTrac**

Santiago Espinosa joined the ImmTrac team on August 01, 2007. Santiago will provide technical support and assist with the ImmTrac Registry providers. Santiago tells us,

"I was formally employed at HHSC, Disaster Relief Program and worked with the natural disasters such as Hurricane Rita and other disaster that have affected the state.

"The program that I was attached to spent over 100 million dollars of state and federal funds that were allocated to the citizens of Texas. I am married with many children (8) as of last count. I am busy doing the parent thing when

not at work and coach baseball at South Austin Little League (the first little league in the state of Texas) I enjoy working with this outfit and look forward to meeting all the great people here."



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UpShot Online Survey

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